



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,205	01/04/2002	Dirk Hogan	10016717	8436

7590 04/20/2005

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

TRAN, NGHI V

ART UNIT

PAPER NUMBER

2151

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/038,205	HOGAN, DIRK
	Examiner Nghi V. Tran	Art Unit 2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 04 January 2002.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-16 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 2, 11-12, and 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 2 recites the limitation "a current configuration state" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 11 recites the limitation "a storage unit" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.
5. Claim 12 recites the limitations "a storage server", "an associated LUN group", and "a shared group" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 14 recites the limitations "an associated LUN group", "a storage server", and "a shared group" in lines 3-5. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 15 recites the limitations "an associated LUN group" and "a shared group" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-4, 7-8, 11-12, and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Taylor et al., U.S. Patent No. 6,654,830 (hereinafter Taylor).

10. With respect to claim 1, Taylor teaches a method for validating network configuration change commands in a distributed network environment [see abstract and figs.1 and 6-8], comprising:

- providing a change command [i.e. change map LUN A to device Y] to a network management device [10] residing in the network [i.e. storage network], the change command expresses a change to the configuration of the network [col.5, lns.45-59] and implicitly indicates an initial configuration

state of the network [fig. 1 and col.5, Ins.44-65 i.e. an initial configuration state is interpreted as stage 1];

- determining a current configuration state of the network [fig. 1 i.e. stage 2]; and
- implementing the change command when the change command is expressed in terms of the current configuration state of the network [fig. 1 i.e. stage 3].

11. With respect to claim 2, Taylor further teaches determining a current configuration state of the network further comprises accessing a virtual representation of the network configuration [col.8, Ins.36-66 i.e. a virtual representation of the network configuration is interpreted as a virtual device].

12. With respect to claim 3, Taylor further teaches implementing the change command further comprises comparing the initial configuration state indicated by the change command to the current configuration state of the network; and implementing the change command when the initial configuration state indicated by the change command correlates to the current configuration state of the network [col.5, ln.66 - col.6, ln.17].

13. With respect to claim 7, Taylor teaches a method for validating storage allocation commands in a storage area network [see abstract and figs. 1 and 6-8], comprising:

- providing a storage allocation command [i.e. change map LUN A to device Y] to a network management device [10] residing in the network [i.e. storage network], the storage allocation command expresses a change to the configuration of storage resources and implicitly indicates an initial configuration state [i.e. stage 1] of the storage resources in the network [fig.1 and col.5, Ins.44-65];
- determining a current configuration state of the storage resources in the network [fig.1 i.e. stage 2];
- determining if the storage allocation command is expressed in terms of the current configuration state of the network [col.5, In.66 - col.6, In.17 i.e. depending on the progress of the hot copy and on the type of request]; and
- implementing the storage allocation command when the storage allocation command is expressed in terms of the current configuration state of the network [fig.1 i.e. stage 3].

14. With respect to claims 4 and 8, Taylor further teaches disregarding the change command [i.e. a logical block is locked] as being an invalid request [i.e. refused] when the initial configuration state indicated by the change command does not correlate to the current configuration state of the network [col.16, Ins.4-47].

15. With respect to claims 11 and 14, Taylor further teaches the storage allocation command is selected for the group consisting of: assigning a storage unit to a storage

server; assigning a storage unit to a shared group; and assigning a storage unit to an associated LUN group [fig.1 and col.5, ln.66 - col.6, ln.17 i.e. map LUN A to device Y].

16. With respect to claims 12 and 15, Taylor further teaches the storage allocation command implicitly indicates that the storage unit is not currently assigned to either a storage server or an associated LUN group and is not currently grouped in a shared group [fig.1 i.e. device Y is not map LUN A in stage 1].

***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 5-6 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor as applied to claims 1 and 7 above, and further in view of George et al., U.S. Patent No. 6,026,462 (hereinafter George).

19. With respect to claims 5 and 9, Taylor is silent on providing an assign command to the network management device, where the assign command establishes an association between a storage unit to a storage server, thereby granting the storage server read-write access to the storage unit; determining if the storage unit is currently

assigned in the network; and implementing the assign command when the storage unit is currently unassigned in the network.

In a method for configuring a SAN, George discloses providing an assign command to the network management device, where the assign command establishes an association between a storage unit to a storage server, thereby granting the storage server read-write access to the storage unit; determining if the storage unit is currently assigned in the network; and implementing the assign command when the storage unit is currently unassigned in the network [fig.4 and col.5, Ins.4-28].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Taylor in view of George by providing an assign command to the network management device because this feature provides storage reassignment to perform dynamically without any disruption to the operating system or any active application programs [George, col.4, Ins.15-17]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Taylor in view of George in order to dynamically reassign in a particular configuration without any disruption to the operating system or any active application programs [George, col.4, Ins.37-63].

20. With respect to claims 6 and 10, Taylor is silent on providing an unassign command to the network management device, where the unassign command disassociates a storage unit from a storage server; determining if the storage unit is

currently assigned in the network; and implementing the unassign command when the storage unit is currently assigned in the network.

In a method for configuring a SAN, George discloses providing an unassign command to the network management device, where the unassign command disassociates a storage unit from a storage server; determining if the storage unit is currently assigned in the network; and implementing the unassign command when the storage unit is currently assigned in the network [fig.4 and col.5, Ins.4-28 and col.5, In.65 - col.6, In.2].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Taylor in view of George by providing an unassign command to the network management device because this feature provides storage reassignment to perform dynamically without any disruption to the operating system or any active application programs [George, col.4, Ins.15-17]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Taylor in view of George in order to dynamically reassign in a particular configuration without any disruption to the operating system or any active application programs [George, col.4, Ins.37-63].

21. Claims 13 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor as applied to claims 1 and 7 above, and further in view of Brisse, U.S. Patent Application Publication No. 2003/0055932 (hereinafter Brisse).

22. With respect to claims 13 and 16, Taylor teaches determining if the storage unit is currently grouped in the network [fig.1 i.e. map LUN A to device X, not to device Y]; and implementing the storage allocation command when the storage unit is currently not grouped in the network [fig.1 i.e. change map LUN A to device Y in stage 2 and device Y is not group in LUN A in stage 1].

However, Taylor is silent on determining if the storage unit is currently assigned in the network; and implementing the storage allocation command when the storage unit is currently not assigned in the network.

In a method for configuring a SAN, Brisse discloses determining if the storage unit [i.e. cluster] is currently assigned in the network [i.e. SAN] [136 i.e. cluster validation]; and implementing the storage allocation command when the storage unit is currently not assigned in the network [fig.4 and paragraphs 0049-0051].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Taylor in view of Brisse by implementing the storage allocation command when the storage unit is currently not assigned and not grouped in the network because this feature provides an improved method for validating the selected SAN configuration [Brisse, paragraph 0012]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Taylor in view of Brisse in order to add components to the SAN with real-time rule validation [Brisse, paragraph 0011].

### ***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. "System and method for the allocation of network storage," by Jaskiewicz et al., U.S. Patent Application Publication No. 2003/0061491.

b. "Method and apparatus for enhancing access to redundant data storage facilities," by Le Crone et al., U.S. Patent No. 6,874,046.

c. "Method for managing logical volume in order to support dynamic online resizing and software raid," by Kim et al., U.S. Patent Application Publication No. 2003/0023811.

d. "Method and apparatus for reconfiguring striped logical devices in a disk array storage," by Don et al., U.S. Patent No. 6,546,457.

e. "Method and apparatus for virtual resource handling in a multi-processor computer system," by KAUFFMAN, U.S. Patent Application Publication No. 2002/0032850.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi V Tran whose telephone number is (571) 272-4067. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571) 272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi V Tran  
Patent Examiner  
Art Unit 2151

NT



ZARNI MAUNG  
SUPERVISORY PATENT EXAMINER